DPS Telecom

"Your Partners In Network Alarm Monitoring"

T/Mon SLIM

HARDWARE MANUAL

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Revision History	
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November 23, 2005	T/Mon SLIM Hardware Manual release. Alarm monitoring capacity increased to 10,000 alarm points.
March 23, 2006	Editorial Changes: Fuse now reads 3/4 Amp GMT. Current Draw now reads 500mA
September 3, 2008	Added pinout; spec clarification
July 16, 2009	Added spec clarification

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1 TMon SLIM Overview

Fig. 1.1. *T/Mon SLIM*

T/Mon SLIM: 1 RU Alarm Master for Real-Time Visibility of Local and Regional Networks
T/Mon SLIM is a new light-capacity, 1 RU model of the T/Mon NOC Remote Alarm Monitoring System, scaled to the needs of small, local and regional networks. Cost-effective and easy to install, T/Mon SLIM puts high quality network alarm monitoring within the reach of any company and any maintenance department. T/Mon SLIM puts visibility and control of your alarms directly into your hands, giving you the power to proactively manage the equipment and remote sites you're responsible for.

With T/Mon SLIM, you can:

- Consolidate alarms from several sites into a single local/regional network view
- Monitor alarms in SNMP, TL1, ASCII and nearly 20 standard, proprietary and legacy protocols*
- Send automatic pager and email alarm notifications to technicians in the field
- Remotely access alarms via Web browser
- Forward alarms to a T/Mon NOC or SNMP manager at a centralized location*
- Combine two T/Mon SLIM units in a hot standby primary-secondary geodiverse backup plan
- Maintain alarm history logs and analyze past alarms to identify network weak spots and anticipate future problems
- Use Derived Alarms to track complex network problems
- Use Derived Controls to program flexible automatic corrections for network problems

*These options require separate T/Mon software modules

Slim 1 RU design
T/Mon SLIM is a slim, 1 RU unit that fits into any 19" or 23" rack, in any telco environment, without taking space away from revenue-generating equipment. Dual –48 VDC power inputs allow T/Mon SLIM to be powered from the same battery power as the rest of your equipment — and give you a backup power supply in case of primary power failure.

You don't have to trip over bulky alarm consoles — you can set up T/Mon SLIM in any equipment room and not worry about it. Up to five users can simultaneously connect to T/Mon SLIM using its built-in Web Browser Interface or T/Windows

T/Mon SLIM is primarily built for modern, LAN-based network environments. The unit's 10/100 BaseT Ethernet port provides a LAN connection for receiving alarm reports from devices; forwarding alarms to T/Mon NOC or an SNMP manager; and download T/MonXM software updates. Four RS-232 ports provide legacy polling of serial devices.

2 Shipping List

Please make sure all of the following items are included with your T/Mon SLIM. If parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at **1-800-622-3314**.

T/Mon SLIM
D-PK-TMONS-120XX

T/Mon SLIM User Manual
D-OC-UM097.16100

T/Mon SLIM Software CDs

Ethernet Cable 14 ft.
D-PR-923-10A-14

RJ45-DB9 T/AccessMW Cable
D-PR-944-10A-00

23" Rack Ears

19" Rack Ears

Eight 3/8" Ear Screws

Four Rack Screws

Four Alternate Rack Screws

Two 3/4 Amp GMT Fuses (Single power input models)
Three 3/4 Amp GMT Fuses (Dual power input models)

Fuse Alarm Relay Connector Plug

One Power Connector Plug (Single power input models)
Two Power Connector Plugs (Dual power input models)

3 T/Mon SLIM Optional Support Services

DPS Telecom is ready support you with additional services to make turning up and maintaining your T/Mon SLIM easy and efficient. To order any of these optional services, call DPS Telecom at **1-800-622-3314**.

Turn-Up and Installation
This is absolutely the quickest and easiest way to get your T/Mon SLIM up and running. Our on-site turn-up assistance team will help install and configure your system and train your staff to use it. Even if you haven't ordered Turn-Up and Installation service, it's not too late. Call 1-800 622-3314 and order Turn-Up and Installation today.

Offsite Databasing
Defining your T/Mon SLIM alarm database can be complex — let us do it for you. Offsite databasing service is especially helpful if you're upgrading to T/Mon SLIM from a legacy system — we can convert your existing database from your legacy master.

Custom Programming
If you have unique network monitoring needs, DPS Telecom can create a custom-design solution just for you.

T/Mon Gold Plan Annual Maintenance Agreement
A T/Mon Gold Plan Maintenance Agreement is an added layer of security for your network. It's the safest way to ensure that your revenue-generating equipment is being protected by our newest hardware and solutions. The T/Mon Gold Plan includes:

1. 50% off T/Mon SLIM hardware upgrades every three years
2. Priority upgrades for T/Mon SLIM software releases
3. Priority T/Mon hardware repair or replacement within three business days
4. Priority tech support calls with no per-incident charges
5. Four tech support check-up calls a year
6. Free DPS Factory Training for up to three members of your team
7. Online access to MyDPS and T/Mon User's Group Web forums

4 Specifications

Protocols (Input)*:	ASCII, Badger, Cordell, DCM, DCP, DCPf, DCPx, DCM, E2A, Granger, Larse, Modbus, NEC, NTP, Ping, Pulsecom, SNMP, TABS, TBOS, Teltrac, TL1
Protocols (Output)*:	DCP, DCPf, DCPx, SNMP
Monitoring Capacity:	64 devices/10,000 alarm points
Dimensions:	1.75" H (1 RU) x 17" W x 12" D (4.45 cm x 43.18 cm x 30.48 cm)
Weight:	10 lbs (4.54 Kg)
Mounting:	19" or 23" rack
Power Input:	Dual –48 VDC
Current Draw:	500 mA
Fuses:	Two 3/4 Amp GMT
Serial Ports:	4 RJ45 Connectors
Serial Port Interface:	RS-232 / 33.6 Modem varies on configuration
LAN Interface:	10/100 BaseT
Processor:	400 MHz
Visual Display:	Front panel LCD, 8 bicolor LEDs
Unit Controls:	4 LCD menu control buttons
Hardware Warranty:	2 years
Operating Temperature:	50°–95° F (10°–35° C)
Operating Humidity:	0%–95% noncondensing

*Optional T/Mon Software Module(s) required to support some input/output protocols.

5 Installation

5.1 Tools Needed

To install T/Mon SLIM, you'll need the following tools:

Phillips No. 2 Screwdriver

Small Standard No. 2 Screwdriver

Voltmeter

PC with T/AccessMW software

5.2 Mounting

Fig. 5.2.1. *T/Mon SLIM can be flush or rear-mounted*

T/Mon SLIM mounts in a 19" rack or a 23" rack using the provided rack ears for each size. Two rack ear locations are provided. Attach the appropriate rack ears in the flush-mount or rear-mount locations shown in Figure 5.2.1.

Note: Rack ears can be rotated 90° for wall mounting or 180º for other mounting options (not shown).

5.3 Power Connection

Fig. 5.3.1. *Power connectors and fuses*

T/Mon SLIM has two screw terminal barrier plug power connectors, located on the right side of the back panel. (See Figure 5.3.1.)

Before you connect a power supply to T/Mon SLIM, test the voltage of your power supply:

- Connect the black common lead of a voltmeter to the ground terminal of the battery, and connect the red lead of the voltmeter to the battery's –48 VDC terminal. The voltmeter should read between –43 and –53 VDC. If the reading is outside this range, test the power supply.

To connect T/Mon SLIM to a power supply, follow these steps:

1. Remove the fuses from the back panel. **Do not reinsert the fuse until all power connections have been made.**
2. To ground T/Mon SLIM, connect a grounding wire to the grounding lug.
3. Remove the power connector plug from Power Connector A. Note that the plug can be inserted into the power connector only one way — this ensures that the barrier plug can only be reinserted with the correct polarity. Note that the **–48V terminal is on the left and the GND terminal is on the right**.
4. Insert a **battery ground** into the power connector plug's **right terminal** and tighten the screw; then insert a **–48 VDC** line to the plug's **left terminal** and tighten its screw.
5. Push the power connector plug firmly back into the power connector. If the power feed is connected correctly, the LED by the connector will light **GREEN**. If the polarity of the power feed is reversed, the LED by the power connector will light **RED**.
6. Repeat Steps 2–4 for Power Connector B.
7. Reinsert the fuse to power T/Mon SLIM. The front panel LEDs will blink **RED** and **GREEN** after 20–30 seconds.

5.4 Fuse Alarm Relay Output

Fig. 5.4.1. *Fuse alarm relay output*

The fuse alarm relay output (shown in Figure 5.4.1) is a contact closure relay output.

5.5 LAN Connection

Fig. 5.5.1. *Ethernet port*

Connect T/Mon SLIM to your LAN by inserting a standard Ethernet cable into the 10/100 BaseT port located on the rear of the unit. (See Figure 5.5.1).

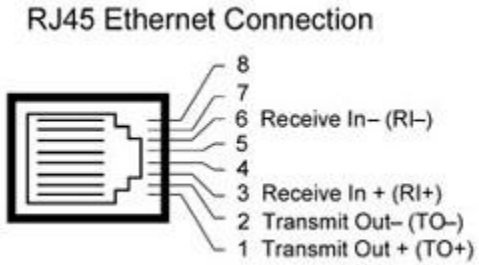

Fig. 5.5.2 *Ethernet port pinout*

The pinout for the 10/100 BaseT port is shown in Figure 5.5.2, above.

5.6 Data Ports

Fig. 5.6.1. *Serial data ports*

T/Mon SLIM has four RJ45 serial data ports on the left side of the back panel, as shown in Figure 5.6.1. These ports connect legacy alarm monitoring equipment over an RS-232 serial interface.

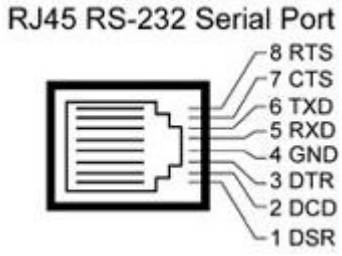

Fig. 5.6.2. *Serial data port pinout*

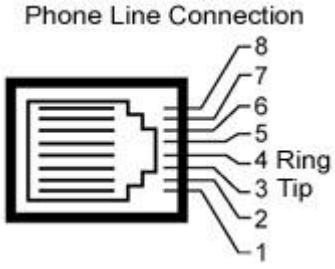

Fig. 5.6.3 *Telco jack pinout*

The pinouts for the serial data ports and 33.6 modem are shown above.

6 Getting Started with T/Mon SLIM

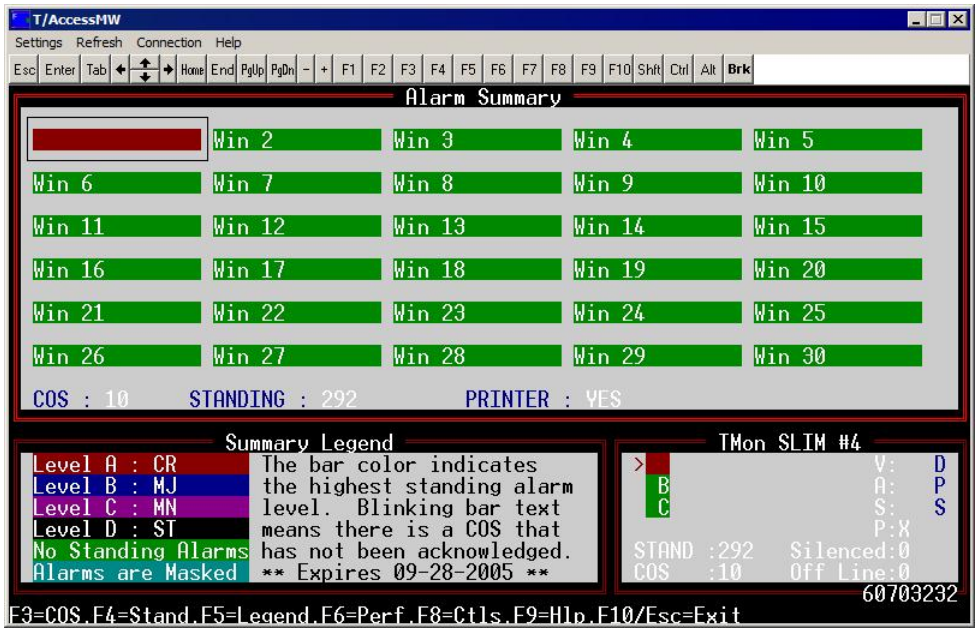
T/AccessMW
Settings Refresh Connection Help
Esc Enter Tab Home End PgUp PgDn F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 Shft Ctrl Alt Brk
Alarm Summary
Win 2 Win 3 Win 4 Win 5
Win 6 Win 7 Win 8 Win 9 Win 10
Win 11 Win 12 Win 13 Win 14 Win 15
Win 16 Win 17 Win 18 Win 19 Win 20
Win 21 Win 22 Win 23 Win 24 Win 25
Win 26 Win 27 Win 28 Win 29 Win 30
COS : 10 STANDING : 292 PRINTER : YES
Summary Legend
Level A : CR
Level B : MJ
Level C : MN
Level D : ST
No Standing Alarms
Alarms are Masked
The bar color indicates the highest standing alarm level. Blinking bar text means there is a COS that has not been acknowledged.
** Expires 09-28-2005 **
TMon SLIM #4
V: D
A: P
S: S
P:X
STAND :292 Silenced:0
COS :10 Off Line:0
60703232
F3=COS,F4=Stand,F5=Legend,F6=Perf,F8=Ctls,F9=Hlp,F10/Esc=Exit

Fig. 6.1. *T/Mon SLIM, up, running and ready to go*

Once the T/Mon SLIM hardware is fully installed and booted up, your next step is to define your T/Mon SLIM database and start monitoring. Instructions for using the full T/Mon SLIM software is beyond the scope of this hardware manual. See the T/MonXM User Manual for documentation on defining the T/Mon SLIM database and using Monitor Mode.,

Note: The T/MonXM User Manual includes material on T/Mon NOC, IAM-5, IAM and T/MonXM WorkStation hardware configurations that are not part of T/Mon SLIM. Some optional T/Mon functions require additional T/Mon Software Modules. To order additional T/Mon Software Modules, call DPS Telecom at **1-800-622-3314**.

To define your T/Mon SLIM database or monitor alarms with T/Mon SLIM, you need to connect a PC to the T/Mon SLIM unit via a serial or LAN connection, using the included T/Mon remote access software. Your T/Mon SLIM software CDs include two Windows programs for accessing T/Mon SLIM: T/AccessMW and T/Windows.

T/AccessMW provides direct console access to T/Mon SLIM for full system administrators. With T/AccessMW you can edit the T/Mon database as well as monitor alarms.

T/Windows provides limited client access for network monitoring personnel, and can only be used when T/Mon SLIM is in Monitor Mode. T/Windows users cannot change the T/Mon database.

For instructions on starting T/AccessMW, see the following section, Section 6.1, "Connecting a PC to T/Mon SLIM with T/Access." For more information about remote access to T/Mon SLIM, see the T/AccessMW and T/Windows documentation.

6.1 Connecting a PC to T/Mon SLIM with T/AccessMW

This section is a brief guide to connecting to T/Mon SLIM with T/AccessMW. For full information about T/Mon SLIM remote access, see the T/AccessMW and T/Windows documentation.

T/AccessMW runs on Windows 95, 98, ME, NT, 2000 and XP. To install T/AccessMW on your PC, use the standard Windows installer program provided on your T/Mon SLIM software CD.

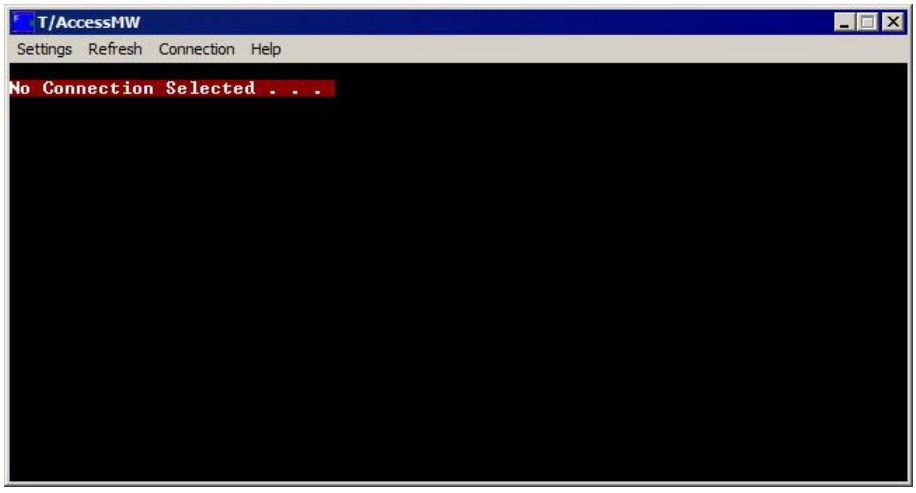

Fig. 6.1.2. *T/AccessMW with no connection selected*

When you first start T/AccessMW, you'll see the blank window shown in Figure 6.1.2. To connect to T/Mon SLIM, you'll need to choose your connection type and initiate the connection.

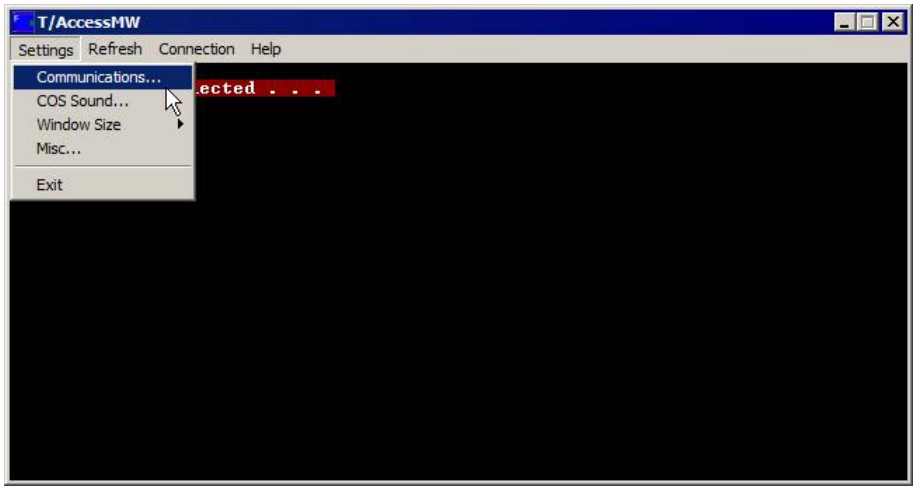

Fig. 6.1.3 *Choose* ***Communications...*** *from the Settings menu to get started*

To choose your communications type, choose **Communications...** from the Settings menu (see Figure 6.1.3). This will open the dialog box shown in Figure 6.1.4, on page 10.

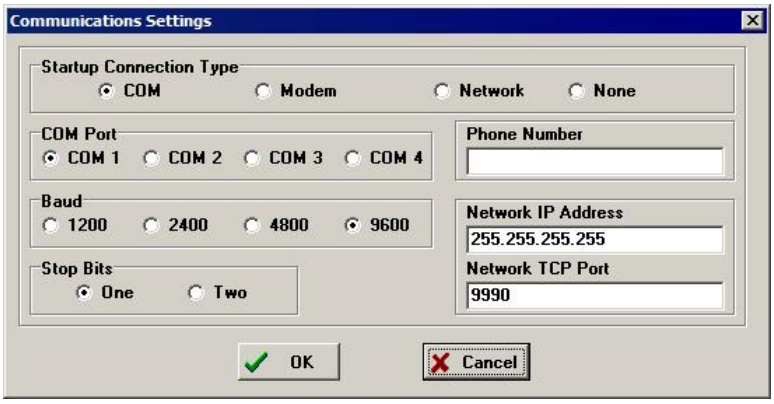

Fig. 6.1.4 *Communications Settings dialog box*

Select your communications type by clicking either COM (serial connection) or Network (LAN connection) in the Startup Connection Type area. T/AccessMW also supports Modem connections, but for initial T/Mon SLIM setup you should use either a serial or LAN connection.

To make a serial connection to T/Mon SLIM, click COM and then choose which COM port on your PC you want to use by clicking the appropriate button in the COM Port section. Use the supplied RJ45-to-DB9 cable to connect your PC COM port to one of T/Mon SLIM's four back-panel data ports. By factory default, Data Port 1 is configured as a T/AccessMW serial port. You can change which data port you use for T/AccessMW connections using the Boot Menu. (For instructions, see Section 7.1.2, "TLink RS232 — Choose Data Port for T/AccessMW Connection.")

To make a LAN connection to T/Mon SLIM, click Network and enter the T/Mon SLIM's IP address in the Network IP Address box. T/Mon SLIM's default IP address is **192.168.1.1**. You can change T/Mon SLIM's IP address using the Boot Menu. (For instructions, see Section 7.1.3, "IP Add/Gate/Sub — Edit IP Address.")

Your next step is to initiate the T/AccessMW connection.

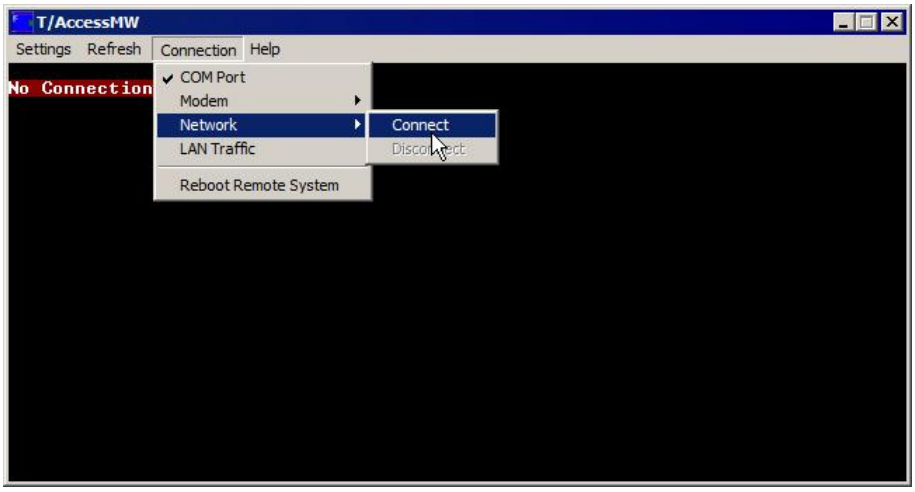

Fig. 6.1.5 *Initiating a LAN connection*

To start your connection to T/Mon SLIM, click the **Connection** menu (see Figure 6.1.5, above):

To initiate a serial connection, click **COM Port**.

To initiate a LAN connection, point to **Network**, then click **Connect**.

7 LCD Display

Fig. 7.1. *T/Mon SLIM LCD showing the Standard Prompt*

T/Mon SLIM's front panel LCD displays system status messages and menu commands for controlling the T/Mon SLIM unit. You can access two separate control menus through the LCD:

1. **Boot Menu:** This menu is available only if you activate it shortly after booting T/Mon SLIM. (For instructions on activating the Boot Menu, see Section 7.1, "Boot Menu.") The Boot Menu provides commands for controlling T/Mon SLIM without starting the T/Mon SLIM software. Using the Boot Menu is not required for normal operation of T/Mon SLIM; Boot Menu commands are only used for initial communications setup and recovery operations. The Boot Menu is described in detail in Section 7.1, "Boot Menu."
2. **Monitor Mode Menu:** This menu is available only when T/Mon SLIM is in Monitor Mode. You can use the Monitor Mode Menu to check T/Mon SLIM unit status, standing and COS alarms, and other options. The Monitor Mode Menu is described in detail in Section 7.2, "Monitor Mode Menu."

Both control menus are operated using the **Menu, Sel, +** and **–** buttons located near the LCD. (See Figure 7.1, above.) For both control menus, the general operation of the control buttons is the same:

- Use the **+** and **–** buttons to scroll through the available menu commands.
- To select a menu command, press **Sel**. Selecting a command may invoke a submenu of additional options.
- To cancel an operation, exit from a submenu to the main menu, or to exit the control menu altogether, press **Menu**.
- If you make an invalid entry for certain Boot Menu commands, T/Mon SLIM will beep to indicate the error.

7.1 Boot Menu

Fig. 7.1.1. *Press* ***Sel*** *to start the Boot Menu*

The **Boot Menu** provides commands for controlling T/Mon SLIM without starting the T/Mon SLIM software. Using the Boot Menu is not required for normal operation of T/Mon SLIM; Boot Menu commands are only used for initial communications setup and recovery operations.

The Boot Menu is available only if you activate it shortly after booting T/Mon SLIM.

To activate the Boot Menu: Power T/Mon SLIM. In approximately 20–30 seconds after the unit is powered, all LEDs on the T/Mon SLIM front panel will blink **RED** and **GREEN**, and the LCD will display the Boot Menu prompt shown in Figure 7.1.1, above. Press **Sel** to activate the Boot Menu.

Pressing **Sel** at the Boot Menu prompt will invoke the TLink RS232 command, which is described in Section 7.1.1. "TLink RS232." To select other commands, use the **+** and **–** buttons to scroll through the Boot Menu.

If you do not activate the Boot Menu, an automatic timeout feature will continue regular T/Mon SLIM booting.

A conceptual map of Boot Menu navigation is shown in Section 7.1.1, "Boot Menu Navigation Map."

The Boot Menu commands are described in detail in Sections 7.1.2–7.1.11, below.

7.1.1 Boot Menu Navigation Map

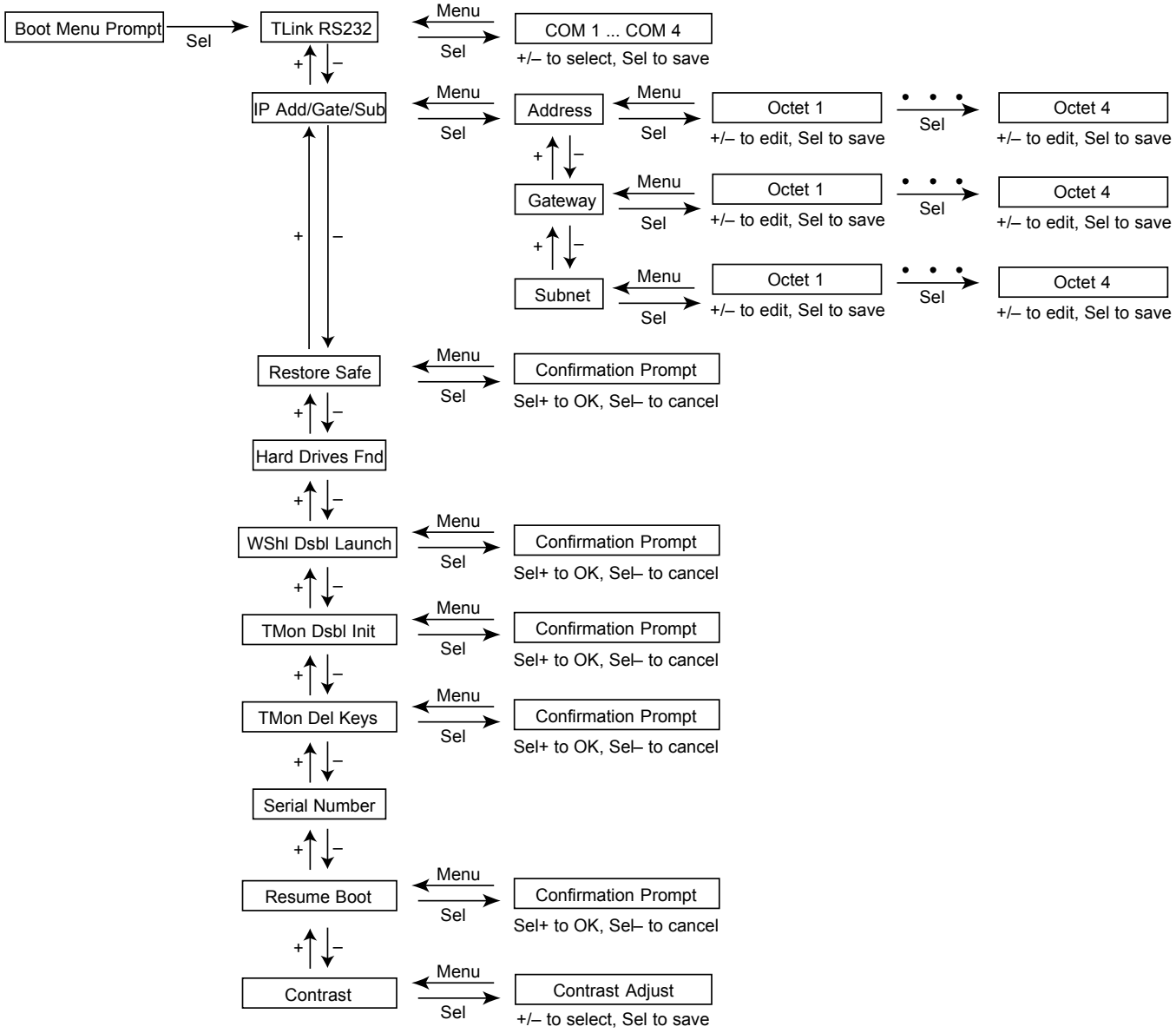

Fig. 7.1.1.1. *Conceptual map of the Boot Menu options*

This diagram (Figure 7.1.1.1) maps the navigation of the Boot Menu commands. Use the + and – buttons to scroll through the Boot Menu. Press **Sel** to enter the command submenu. Use the + and – keys to scroll through the available options. When the option you want is displayed, press **Sel** again to make your selection. To cancel and exit the command submenu, press **Menu**.

The Boot Menu commands are explained in detail in Sections 7.1.2-7.1.11.

7.1.2 TLink RS232 — Choose Data Port for T/AccessMW Connection

Fig. 7.1.2.1. *TLink RS232 command*

The **TLink RS232** command is the first item on the Boot Menu. This command appears after you press **Sel** at the Boot Menu prompt. From here you can either scroll to other Boot Menu commands by pressing the **+** and **–** buttons, or you can edit the TLink RS232 options by pressing **Sel**.

Fig. 7.1.2.2. *Editing TLink RS232 options*

The TLink RS232 command selects which of T/Mon SLIM's four data ports is used to connect a PC to T/Mon SLIM using T/AccessMW over an RS-232 serial connection. Selecting the TLink RS232 command invokes the screen shown in Figure 7.1.2.2, above. The bottom line of the display shows which port is currently selected — in this case, COM 1 (or Data Port 1).

If Data Port 1 is populated with an RS-232 port, it will be the factory default port for T/Link. However, you can define a different data port for T/Link serial connection using W/Shell, the T/Mon SLIM shell program. If a different port is defined for T/Link in W/Shell, it will be the first one displayed in the TLink RS232 submenu.

To select a different port, press the **+** or **–** button until the port you want is displayed.

To save your selection, press **Sel**.

To exit the TLink RS232 submenu without changing your COM port settings, press **Menu**.

Note: Defining a data port as a T/Link port suspends it for use as a T/Mon serial polling port. Once you've defined any data port as a T/Link port, the TLink RS232 command in the Boot Menu can only reassign the T/Link port — it cannot deactivate the T/Link port entirely. To deactivate the T/Link port, you must do so through W/Shell. Once the T/Link port is deactivated, any T/Mon serial polling on that port automatically resumes.

7.1.3 IP Add/Gate/Sub — Edit IP Address

Fig. 7.1.3.1. *IP Add/Gate/Sub command*

The **IP Add/Gate/Sub** command provides controls for editing T/Mon SLIM's IP address, gateway and subnet settings. To edit your IP settings, press **Sel** at IP Add/Gate/Sub prompt screen, shown in Figure 7.1.3.1, above.

Note: The preferred way to configure IP address settings is through the Network Setup command in W/Shell, the T/Mon SLIM shell program. T/Mon SLIM's factory default IP address is **192.168.1.1**.

Fig. 7.1.3.2. *IP address display. Press* ***Sel*** *to edit or scroll to display the gateway or subnet settings*

Selecting the IP Add/Gate/Sub command invokes a screen similar to that shown in Figure 7.1.3.2. above. Note that the number shown is prefixed with the letter "A" — this letter indicates that this is the T/Mon SLIM unit's IP address. The IP gateway is indicated by the letter "G," and the IP subnet by the letter "S."

To edit the IP address, press **Sel**.

To scroll to the gateway or subnet display, press the **+** or **–** button. When you see the setting you want to change, press **Sel** to edit it.

Fig. 7.1.3.3. *Press* ***+*** *or* ***–*** *to change the first octet of the IP address ...*

Fig. 7.1.34. *...and then press* ***Sel*** *to save your changes and move to the next octet*

When you have selected the IP address, gateway or subnet for editing, you'll see a caret (^) cursor below the last digit of the first octet of the number, as shown in Figure 7.1.3.3, above. You have to edit IP settings one octet (each set of numbers between the dots) at a time. The caret shows which octet is selected for editing.

To edit, press the **+** or **–** button once to change the octet by one digit. Pressing and holding the **+** or **–** button makes the numbers change faster, like setting the time on a digital alarm clock.

To save your changes to an octet, press **Sel**. The cursor will move to the next octet.

When you have saved the settings for each octet of the address, the caret cursor will disappear.

To scroll between the IP address, gateway and subnet displays, press the **+** or **–** button.

To exit the IP Add/Gate/Sub submenu, press **Menu**.

7.1.4 Restore Safe — Revert to Last Good Configuration

Fig. 7.1.4.1. *Restore Safe command*

The **Restore Safe** command reverts T/Mon SLIM to its last saved good configuration. **Use this command only when directed to do so by DPS Telecom Technical Support personnel. Executing this command will permanently overwrite your current configuration files!**

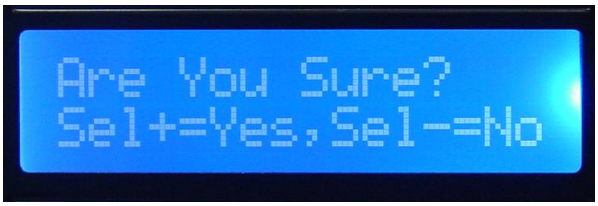

Fig. 7.1.4.2. *Confirmation prompt*

Press **Sel** to begin the Restore Safe operation. This will invoke the confirmation prompt shown in Figure 7.1.4.2, above.

To execute the Restore Safe operation, press the **Sel** and **+** buttons **simultaneously**.

To cancel the Restore Safe operation, press the **Sel** and **–** buttons **simultaneously**.

To exit the Restore Safe submenu **without executing the Restore Safe Operation**, press **Menu**.

7.1.5 Hard Drives Fnd — Confirm Hard Drives Are Operational

Fig. 7.1.5.1. *Hard Drives Fnd display*

Hard Drives Fnd is a display-only command that shows which T/Mon SLIM hard drives are operational. If your T/Mon SLIM model is equipped with only one hard drive, this display will always read "PRI Only." But if your T/Mon SLIM model is equipped with two hard drives, this display is a useful double-check diagnostic if the T/Mon SLIM software reports a hard drive failure.

If both hard drives are OK, the LCD will display "PRI + SEC," as shown in Figure 7.1.5.1, above. "PRI" refers to the Primary T/Mon SLIM hard drive; "SEC" refers to the Secondary hard drive.

If the Primary hard drive has failed, the LCD will display "SEC Only."

If the Secondary hard drive has failed (or if your T/Mon SLIM is not equipped with a secondary hard

drive), the LCD will display "PRI Only."

7.1.6 Wshl Dsbl Launch — Prevent Automatic T/Mon SLIM Software Launch

Fig. 7.1.6.1. *WShl Dsbl Launch command*

The **WShl Dsbl Launch** command disables an option in W/Shell (the T/Mon SLIM shell program) to automatically launch the T/Mon SLIM software at boot. You may want to disable this option if a T/Mon software session ends abnormally, causing a loop in which the software fails, the unit reboots, and the problem software fails and reboots again.

Press **Sel** to begin the WShl Dsbl Launch operation. This will invoke the confirmation prompt previously shown in Figure 7.1.4.2.

To execute the WShl Dsbl Launch operation, press the **Sel** and **+** buttons **simultaneously**.

To cancel the WShl Dsbl Launch operation, press the **Sel** and **–** buttons **simultaneously**.

To exit the WShl Dsbl Launch submenu **without executing the WShl Dsbl Launch operation**, press **Menu**.

7.1.7 TMon Dsbl Init — Prevent Automatic Monitor Mode Launch

Fig. 7.1.7.1. *TMon Dsbl Init command*

The **TMon Dsbl Init** command disables an option in the T/Mon SLIM software to automatically launch Monitor Mode at startup. You may want to disable this option if a T/Mon software session ends abnormally, causing a loop in which the software fails, the unit reboots, and the problem software fails and reboots again.

Press **Sel** to begin the TMon Dsbl Init operation. This will invoke the confirmation prompt previously shown in Figure 7.1.4.2.

To execute the TMon Dsbl Init operation, press the **Sel** and **+** buttons **simultaneously**.

To cancel the TMon Dsbl Init operation, press the **Sel** and **–** buttons **simultaneously**.

To exit the TMon Dsbl Init submenu **without executing the TMon Dsbl Init operation**, press **Menu**.

7.1.8 TMon Del Keys — Rebuild Database Index Files

Fig. 7.1.8.1. *TMon Del Keys command*

The T/Mon SLIM software manages the various separate files that store the T/Mon alarm database through a series of index files called *keys*. In the unlikely event that these key files lose integrity, you may be instructed by DPS Telecom Technical Support personnel to execute the **TMon Del Keys** command, which deletes the key files in order for the T/Mon SLIM software to automatically rebuild them the next time it's launched.

Press **Sel** to begin the TMon Del Keys operation. This will invoke the confirmation prompt previously shown in Figure 7.1.4.2.

To execute the TMon Del Keys operation, press the **Sel** and **+** buttons **simultaneously**.

To cancel the TMon Del Keys operation, press the **Sel** and **–** buttons **simultaneously**.

To exit the TMon Del Keys submenu **without executing the TMon Del Keys operation**, press **Menu**.

7.1.9 Serial Number

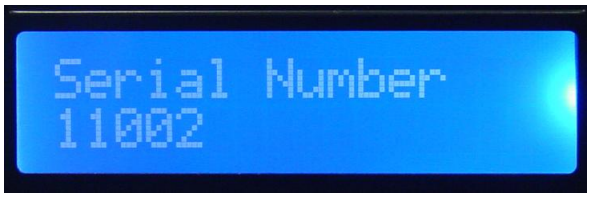

Fig. 7.1.9.1. *Serial Number display*

Serial Number is a display-only option that shows the serial number of your T/Mon SLIM unit.

7.1.10 Resume Boot — Exit Boot Menu and Boot T/Mon SLIM

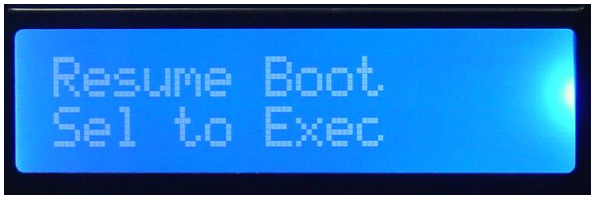

Fig. 7.1.10.1. *Resume Boot command*

The **Resume Boot** command exits the Boot Menu and resumes the T/Mon SLIM boot process.

Press **Sel** to begin the Resume Boot operation. This will invoke the confirmation prompt previously shown in Figure 7.1.4.2.

To execute the Resume Boot operation, press the **Sel** and **+** buttons **simultaneously**.

To cancel the Resume Boot operation, press the **Sel** and **–** buttons **simultaneously**.

To exit the Resume Boot submenu **without executing the Resume Boot operation**, press **Menu**.

7.1.11 Contrast

Fig. 7.1.11.1. *Contrast display*

The **Contrast** display provides controls for adjusting the contrast of the LCD.

To adjust the contrast, press **Sel**, then press the **+** or **–** button until you're satisfied with the settings.

To save your selection, press **Sel**.

To exit the Contrast display and **revert to the default contrast setting**, press **Menu**.

7.2 Monitor Mode Menu

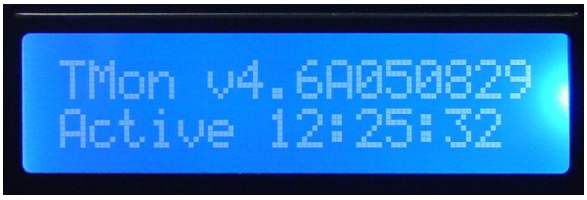

Fig. 7.2.1. *Monitor Mode LCD display, showing the Standard Prompt*

When T/Mon SLIM is in Monitor Mode, the LCD displays a list of system status messages. You can select what information is displayed by using the **Menu**, **Sel** and **+** and **–** buttons.

The LCD can display six different status messages while in Monitor Mode:

The first is the Standard Prompt, which is displayed when no other menu item is selected. (See Figure 7.2.1.) The standard prompt shows three items:

- T/Mon software version
- Polling status. If T/Mon SLIM is polling alarms, the word "Active" will be displayed in the standard prompt. In redundant dual master configurations, the actively polling T/Mon SLIM will display "Active" in the standard prompt, and the back-up T/Mon SLIM will display the word "Passive."
- Current time

To change the LCD display, press the **Menu** button. The LCD display will change to show the screen below:

Fig. 7.2.2. *Standing/COS Alarm Display*

Standing/COS Alarm Display: This screen lists the current number of standing and change-of-state (COS) alarms.

To see other screens, press the **–** button to scroll down the list. You can also press the + button to scroll the list backwards.

In order, the remaining screens are:

Fig. 7.2.3. *Run Time Mon Time Display*

Run Time/Mon Time Display: This screen lists the Run Time (total system uptime since T/Mon SLIM was powered or rebooted) and the Mon Time (total time in Monitor Mode).

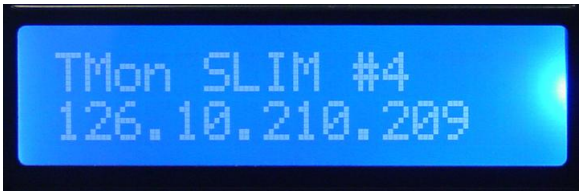

Fig. 7.2.4. *System Name and IP Address Display*

System Name and IP Address Display: This screen lists the system name of this T/Mon SLIM unit and its assigned IP address.

Fig. 7.2.5. *Software Version and Serial Number Display*

Software Version and Serial Number Display: This screen lists the T/Mon software version and the unit's serial number.

Fig. 7.2.6. *Contrast Display*

Contrast Display: This screen provides controls for adjusting the contrast of the LCD display.

To adjust the contrast, press the **+** or **–** button until you're satisfied with the settings.

To save your selection, press **Sel**.

To exit the Contrast display, press **Menu**.

7.3 Other T/Mon Status Messages

Display Message	Description
TCPAgnt Outdated	The version of TCP Agent currently loaded is earlier than the earliest recommended version, TCP Agent 3.0N
TCPAgnt Not Load	TCP Agent is not loaded
Loading TMon	T/Mon SLIM software is loading from disk
Initializing	T/Mon SLIM initializing in preparation for Monitor Mode
Closing Files	T/Mon SLIM closing files during shut down
Offline	T/Mon SLIM currently not monitoring
Halt Monitoring	T/Mon SLIM stopping Monitor Mode

Table 7.3.A. *Additional T/Mon status messages*

When T/Mon SLIM is fully booted, but not in Monitor Mode, other status messages will appear in the LCD display. These status messages are described in Table 7.3.A, above.

7.4 W/Shell Status Messages

Display Message	Description
WShell Loading	W/Shell is loading
WShell Offline	W/Shell is loaded, but T/Mon SLIM software is offline and not monitoring
W/Shell Closing Files	W/Shell is closing files and exiting

Table 7.4.A. *W/Shell status messages*

Other status messages appear in the LCD display only when the W/Shell program is active. W/Shell status messages are described in Table 7.4.A, above.

7.5 Hard Drive Recovery Status Messages

Field	Description
Rebuilding PRI File #…	Hard Drive Recovery Program is rebuilding primary drive “File #” line shows current file being rebuilt.
Rebuilding SEC File #…	Hard Drive Recovery Program is rebuilding secondary drive “File #” line shows current file being rebuilt.

Table 7.5.A. *Hard Drive Recovery status messages*

Other status messages appear in the LCD display when the W/Shell Hard Drive Recovery Program is rebuilding a disk drive. (For more information, see Section 7, "T/Mon Hard Drive Mirroring." Hard Drive Recovery status messages are described in Table 7.5.A, above.

8 Front Panel LEDs

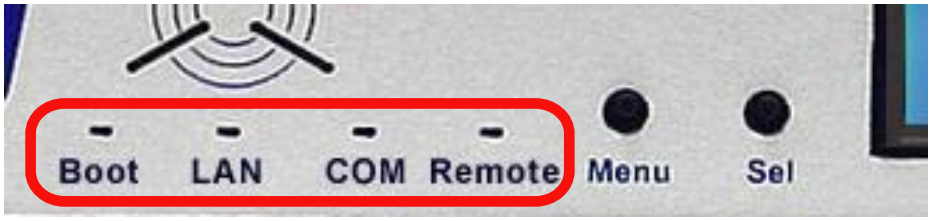

Fig. 8.1. *Front panel LEDs*

T/Mon SLIM's front panel LEDs indicate unit status. LED status messages are described below in Table 8.1.A.

LED	Status	Description
All LEDs	Blinking Green/Red	Boot Menu entry point. Press **Sel** button to reconfigure boot settings or wait 5 seconds for menu timeout
Boot	Blinking Red/Off	User has entered boot menu. T/Mon SLIM will not continue boot until user selects **Resume Boot** menu option.
	Solid Red	T/Mon SLIM out of Monitor Mode
	Solid Green	T/Mon SLIM in Monitor Mode
LAN	Blinking Green	T/Mon SLIM data transmit over LAN
	Blinking Red	T/Mon SLIM data receive over LAN
COM	Blinking Green	T/Mon SLIM data transmit over any of four serial ports
	Blinking Red	T/Mon SLIM data receive over any of four serial ports
Remote	Off	No users logged in
	Blinking Green/Off	Only console user (via T/Access) logged in
	Blinking Red/Off	Only remote user (via T/Windows or Web browser) logged in
	Blinking Green/Red	Console user and remote user logged in simultaneously

Table 8.1.A. *LED status message descriptions*

9 Troubleshooting

9.1 T/Mon Hard Drive Mirroring

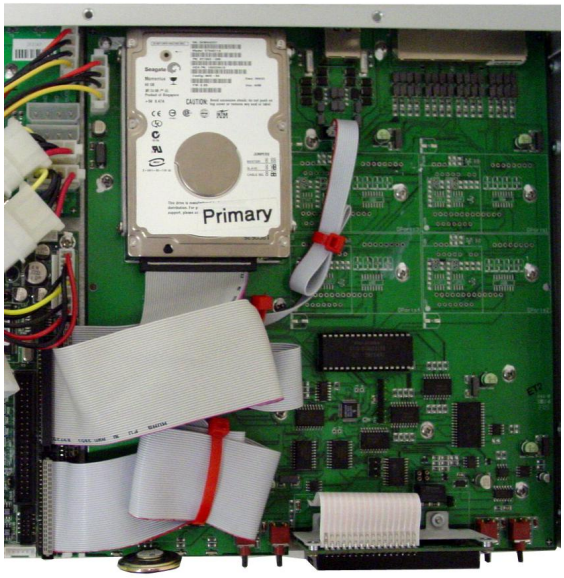

Fig. 9.1.1. *A portion of the interior of the T/Mon SLIM, showing the primary hard drive. The secondary hard drive is mounted below the primary.*

If you have ordered a T/Mon SLIM with two hard drives, your unit supports primary-secondary hard drive mirroring, which provides a backup in case of hard drive failure. The data written to the primary hard drive is continuously mirrored to the secondary hard drive.

If your primary hard drive fails, your T/Mon SLIM system will automatically be restored from the secondary drive, with minimal data loss and downtime.

If your hard drive fails, T/Mon SLIM will reboot, and an internal alarm in Monitor Mode will notify you of the hard drive failure.

If this happens, call DPS Telecom Technical Support at **(559) 454-1600** to order a replacement drive.

To set up your replacement drive, follow the instructions in the next section, Section 9.2, "Hard Drive Recovery Program."

9.2 Hard Drive Recovery Program

Fig. 9.2.1. *W/Shell Hard Drive Recovery Program*

In most cases, replacing a failed hard drive is purely plug-and-play. All you have to do is install the new hard drive and the W/Shell Hard Drive Recovery Program will automatically set it up for you

To install a new hard drive:

1. Shut down T/Mon SLIM and disconnect it from its power and network connections.
2. Open the T/Mon SLIM case and install the new hard drive, following the instructions that shipped with the new drive.
3. Reconnect the T/Mon SLIM to its power and network connections and restart the unit.

The Hard Drive Recovery program will automatically start and begin setting up the new disk. The disk set-up status will be displayed on the T/Mon NOC LCD display (see Section 7.5, "Hard Drive Recovery Status Messages") and in T/AccessMW. (See Figure 9.2.1, above.) This is for your information only — no user action is required to successfully set up your new hard disk.

However, under certain abnormal conditions, you may need to provide the Hard Drive Recovery Program with additional information. (See next section, Section 9.3, "Abnormal Hard Drive Recovery.")

9.3 Abnormal Hard Drive Recovery

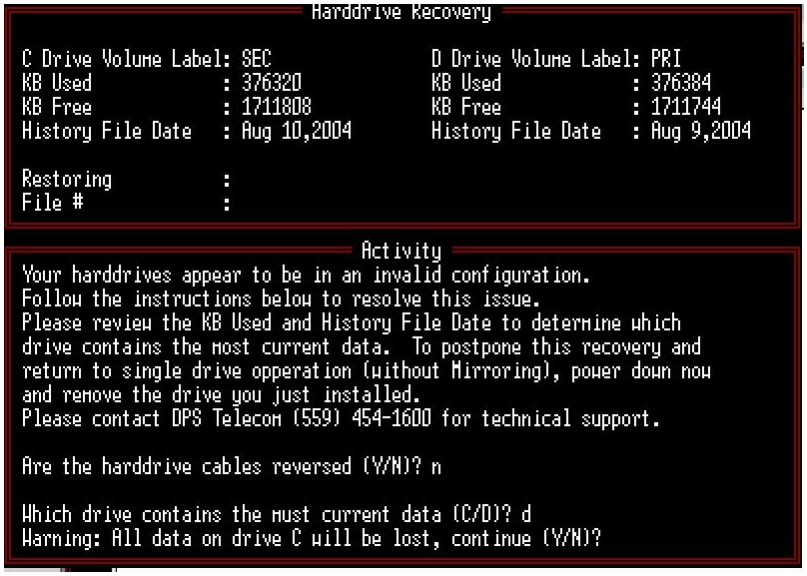
Harddrive Recovery
C Drive Volume Label: SEC
KB Used : 376320
KB Free : 1711808
History File Date : Aug 10,2004
D Drive Volume Label: PRI
KB Used : 376384
KB Free : 1711744
History File Date : Aug 9,2004
Restoring :
File # :
Activity
Your harddrives appear to be in an invalid configuration.
Follow the instructions below to resolve this issue.
Please review the KB Used and History File Date to determine which
drive contains the most current data. To postpone this recovery and
return to single drive opperation (without Mirroring), power down now
and remove the drive you just installed.
Please contact DPS Telecom (559) 454-1600 for technical support.
Are the harddrive cables reversed (Y/N)? n
Which drive contains the most current data (C/D)? d
Warning: All data on drive C will be lost, continue (Y/N)?

Fig. 9.3.1. *The Hard Drive Recovery Program may prompt you to check the hard drive cables or select the drive with the latest data*

On rare occasions, the Hard Drive Recovery Program may not be able to determine which drive is the primary. If that happens, the program will prompt you to provide information to resolve the problem.

If the Hard Drive Recovery Program prompts you for information, please feel free to call DPS Technical Support at **(559) 454-1600** for help in resolving the problem. Alternatively, you can correct the problem yourself by following the on-screen instructions and prompts.

READ THE ON-SCREEN INSTRUCTIONS CAREFULLY AND FOLLOW THEM.

If the Hard Drive Recovery Program cannot determine which hard drive is the primary, it will first ask you to check if the hard drive cables are reversed. If you answer yes, the program will prompt you to shut down T/Mon SLIM, swap the hard drive cables, and restart T/Mon SLIM. (See Figure 9.3.1, above.)

If the hard drive cables are correctly connected, the Hard Drive Recovery Program will ask you which hard drive has the most current data. Check in the disk information window of the Hard Drive Recovery screen (see Figure 9.3.1), where disk information, including the date of the History File, is displayed. This information will help you decide which is the most current disk.

10 Technical Support

DPS Telecom products are backed by our expert Technical Support representatives, live human beings with the training and skills to solve your problems fast. To help us help you better, please take the following steps before calling Technical Support:

1. **Check the DPS Telecom Web site.**
   You will find answers to many common questions on the DPS Telecom Web site, at **www.dpstelecom.com/support**. Look here first for a fast solution to your problem.

2. **Prepare relevant information.**
   Having the important information about your DPS Telecom product ready to hand will help us answer your questions faster. Please have ready your hardware serial number and user number when you call. It's also handy to write down all other important information about your DPS Telecom product. But if you don't have all the information when you call, our Technical Support representatives can help you find it.

3. **Have access to troubled equipment.**
   Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. **Call during Customer Support hours.**
   Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. During these hours Technical Support representatives are on duty in our fully equipped simulation lab.

DPS Technical Support Phone Number: **(559) 454-1600**

Emergency Assistance: *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a paging message. You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible.*

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Technical Support

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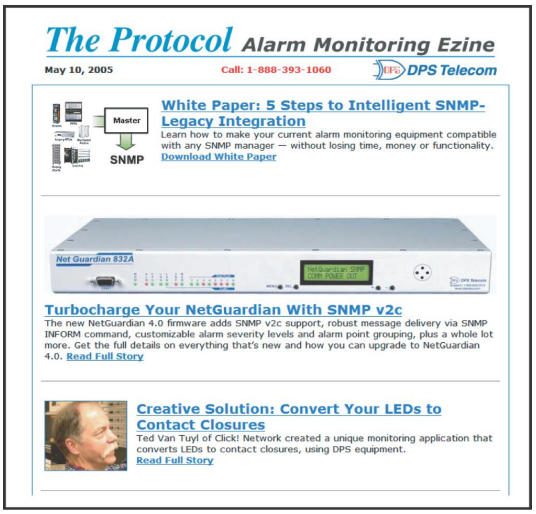
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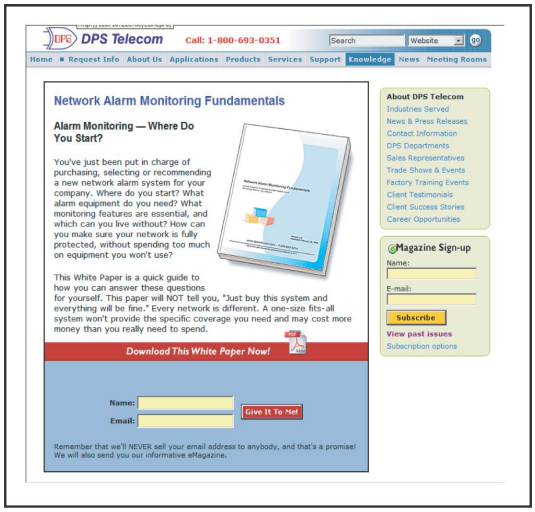
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